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TRANSLATION ATTACHED

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IMS KUNSTSTOFF AG *CH -660-018-A
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Paraffin-based ski-wax contg additive increasing heat-conductivity, pref. homogeneously distributed carbon black and/or graphite
C87-042210

Ski-wax, based on paraffin wax, also contains a homogeneously distributed additive which increases heat-conductivity, pref. C as C black and/or graphite.

ADVANTAGE

The formation of a relatively thick water-film, during the gliding of the skis on snow, is prevented. The ski-wax can be adjusted for various snow categories by varying the C black and/or graphite proportions.

MORE SPECIFICALLY

The ski-wax can contain, by wt., 1-20% C black, 1-50% graphite or 1-70% C black + graphite.

PRODUCTION CLAIMED

The ski-wax is prepd. by distributing C black and/or graphite in molten paraffin wax.

G(2-C)

EXAMPLE

The addn. of 15 pts. wt. C black having particle size 20 nm and oil requirement 500% to 70 pts. wt. paraffin having pt. 54-56° C and 30 pts. micro-paraffin, having m. pt. 80° heated to 110° C, reduced the specific current flow resistanc according to DIN 53482, from over 10 to the power 15 to 10^5 cm. ohm and increased heat-conductivity from 0.4 to 0.5 W/mK. (2pp200BLDwgNo0/0).

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(54) Skiwachs.

(57) Das Skiwachs auf Basis von Paraffinwachs enthält homogen verteilten Russ und/oder Graphit. Dadurch ist seine Wärmeleitfähigkeit erhöht, womit die Bildung von zu dicken Wasserfilmen beim Gleiten des Skis auf Schnee verhindert wird.

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Translated from the G E R M A N

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Owner: IMS Kunststoff AG, Ittigen
Inventor: Urs Geissbühler, [residing in] Thun.
Agents: Hepp Ryffel AG, in Zurich
[Title in GERMAN of the Object of the Invention:]
Skiwachs

SKI WAX

(57) The ski wax on the basis of paraffin wax contains homogeneously distributed soot [carbon black] and/or graphite. As a result of this, its coefficient of thermal conductivity is increased, wherewith the formation of too thick water films, when the ski slides along the snow, is prevented.

PATENT CLAIMS

1. Ski wax on the basis of paraffin wax, characterized in that besides paraffin wax, it contains an additive substance, which increases the thermal conductivity.

2. Ski wax, as claimed in claim 1, characterized in that it contains homogeneously distributed carbon in its capacity as additive substance.

3. Ski wax as claimed in claim 2, characterized in that the carbon is soot [carbon black].

4. Ski wax as claimed in claim 3, characterized in that the content of soot [carbon black] constitutes 1 to 20% by weight.

5. Ski wax as claimed in claim 2, characterized in that the carbon is graphite.

6. Ski wax as claimed in claim 5, characterized in that the graphite content constitutes 1 to 50% by weight.

7. Ski wax as claimed in claim 2, characterized in that it contains a total amount of 1 to 70 % by weight of carbon soot [carbon black] and graphite in their capacity as carbon.

8. Method for the manufacturing of ski wax as claimed in one of the claims 2 thru 7, characterized in that soot [carbon black] and/or graphite are distributed in melted paraffin wax.

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The invention pertains to a ski wax on the basis of paraffin wax, and to a method for the manufacturing of such a ski wax.

When a ski slides on the snow or ice, there originate local spots of a thin water film, due to the frictional heat, which

thin water film is responsible for the low coefficient of friction observed.

On this occasion, the thickness of the water film thus formed exerts a great influence upon this coefficient of friction.

The thermal conductivity of conventional layers of the ski running sole [contact surface], which are made of high-density polyethylene* [*Translator's note: Also called: HDPE; low-pressure polyethylene or linear polyethylene] is low so that, in particular at higher velocities, there originates a relatively thick water film, as a result of which the sliding characteristics of the ski considerably deteriorate.

The object of the invention consists in making available a ski wax, with the help of which steps can be countered.

The ski wax in accordance with the invention, with the help of which ski wax the set objective can be achieved, is characterized in that (besides paraffin wax, the ski wax contains an additive substance, which increases the thermal conductivity.)

Preferably, (carbon (carbon black [soot] and/or (graphite)) is particularly suitable as additive substance) although other additive substances, increasing the coefficient of thermal conductivity are also conceivable, e.g., certain metal oxides, such as zinc oxide.

Surprisingly enough, it was discovered that as a result of the addition of soot [carbon black] and/or graphite to a paraffin wax, a mixture, having defined or specified thermal and electrical conductivity, is obtained. In particular, the

(coefficient of) thermal conductivity increases. By varying the amount of soot [carbon black] and/or graphite, a matching of the ski wax to the various categories of snow is possible.

The ski wax can be made by dispersing suitable types of soot [carbon-black] (or mixtures of graphite and soot) into melted paraffin wax.

Example 1

70 parts by weigh of paraffin, having a melting point of 54/56°C and 30 parts by weight of microparaffin, having a melting point of 80°C, are heated to 110°C. 15 parts by weight of a soot, having a particle size of 20 nm and an oil absorption [oil requirement] of 500%, were distributed into the melt.

The electric and thermal parameters, measured after the cooling, constituted:

	Volume resistivity [volume resistance] according to DIN** 53482	Coefficient of Thermal Conductivity
Conventional ski wax	$> 10^{15}$ cm Ω	0.4 W/mK
Ski wax according to Example 1	10^{15} cm Ω	0.5 W.mK

**Translator's note: DIN is the abbreviation of the German Institute for Standardization [Deutsches Institut für Normierung, and DIN followed by a number denotes a relevant class of the German standards].

Example 2

70 parts by weight of paraffin, having a melting point of 54/56°C and 30 parts by weight of microcrystalline paraffin wax,

having a melting point of 80°C, were melted at 120°C, and replaced by 10 parts by weight of graphite, having a particle size of 7 nm, and by 5 part by weight of the soot [carbon black], cited in Example 1.

The electric and thermal parameters, measured after the cooling, constituted:

	Volume resistivity [volume resistance] according to DIN* 53482	Coefficient of Thermal Conductivity
Conventional Ski Wax	> 10^{15} cm Ω	0.4 W/mk
Ski wax in accordance with Example 2	10^{17} cm Ω	1.0 W/mK

US DEPARTMENT OF COMMERCE/USPTO/STIC/Translations Branch
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